

REPORT
ON THE
SANITARY CONDITION
OF THE
BOROUGH OF CAMBRIDGE,


From January 1st to December 31st, 1899,

BY

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MEDICAL OFFICER OF HEALTH.



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Nunc, ratio quæ sit morbis, aut,
 unde repente
 Mortiferam possit cladem conflare
 coorta
 Morbida vis hominum generi, pecu-
 dumque catervis,
 Expediam. Primum, multarum
 semina rerum
 Esse supra docui, quæ sint vitalia
 nobis ;
 Et contra, quæ sint morbo, mortique,
 necesse est
 Multa volare ; ea quom casu sunt
 forte coorta,
 Et perturbarunt cœlum, fit morbidus
 aër.
 Atque ea vis omnis morborum,
 pestilitasque,
 Aut intrinsecus, ut nubes nebulæque,
 superne
 Per cœlum veniunt ; aut ipsâ sæpe
 coorta
 De terrâ surgunt, ubi putorem
 humida nacta est,
 Intempestivis pluviisque, et solibus,
 icta.

DE RERUM NATURA,
 LIB. VI. 1088—1100.
Lucretius.

•Dovunque drizza Michel Angel l'ale
 Fuggon le nubi, e torna il ciel sereno,
Gli gira intorno un aureo cerchio ; quale
 Veggiam di notte lampeggiar baleno.

ORL. FUR. C. xiv.
Ariosto.

Now whence diseases rise, the
 morbid power
 What, that, once gender'd, spreads
 its baneful blast
 O'er man's pale offspring, and the
 brutal throngs,
 Next will we sing. Already hast
 thou heard
 That seeds exist, from many a sub-
 stance flung,
 To life salubrious, yet, too oft,
 revers'd,
 Noxious, and big with death.
 When spring the last
 Through heaven full flocking, all
 the vital air
 Sickens immediate, through its tex-
 ture chang'd.
 And thus full flock they, their
 pestiferous power
 Fanning around them, from intrinsic
 birth
 In heaven itself begot as mists or
 clouds ;
 Or breath'd from earth, when once
 her sodden'd soil
 Ferments corrupted, plied by cease-
 less rains
 Untimely pour'd, and hot succeeding
 suns.

JOHN MASON GOOD.

Where'er his course the radiant
 envoy steers,
 The clouds disperse, the troubled
 ether clears ;
*And round him plays a circling blaze of
 light,*
*Such as when meteors stream through
 dusky night.*

JOHN HOOLE.

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 - Sketch Map of Borough, showing distribution of cases of Infectious Disease.

I have the honour to present to the Council of the Borough of Cambridge (Urban District Council) my Twenty-fifth Annual Report, containing the Tables of Vital Statistics, with Notes thereupon, and the Sanitary History of the year 1899.

BUSHELL ANNINGSOON.

REPORT.

Vital Statistics.

In framing the estimate of the population to the middle of the year I think it well to adhere to the principles enunciated in my Report for the year 1893 as the best expedient having regard to the conditions under which the Census is taken. The difficulty mentioned in my Report for that year is, however, not the only one which tends to vitiate the calculation, inasmuch as the circumstances affecting the relative constituents of the population do not always correspond at each succeeding Census, which is sometimes taken in full term and at other times in vacation : a fortuitous result is the consequence. Another source of fallacy is the enumeration of a large body of domestic servants, who are for statistical purposes practically immortal ; very few of them live their whole life in the Town, and, as a consequence, few at any age-period contribute their share to the death-toll, although included in the total population.

Estimate of
Population.

The total number of births registered is 869, equal to a birth-rate of 21·3 per 1,000 living per annum. The birth-rate in England and Wales for the same period is given at 29·3 in the summary of the Registrar-General contained in the appendix to his Report for the last quarter of the year.

Birth-rate.

The total number of deaths registered is 587, equal to an uncorrected death-rate of 14·4 per 1,000 living per annum. After making the usual corrections, as indicated at the bottom of Table IV., the total number of deaths properly belonging to the district is

Death-rate.

found to be 544, or 46 less than the corresponding number in 1898, and the crude death-rate 13·3 ; after applying the factor of correction 1·014, the corrected death-rate for Cambridge is 13·5. The death-rate for England and Wales for the same period is given as 18·3.

Zymotic
Mortality.

The deaths belonging to the district due to the chief Zymotic Diseases include 1 from *Scarlet Fever*, 1 from *Enteric Fever*, 6 from *Whooping Cough*, 43 from *Diarrhœa* (41 under 5 years of age)—total 51, equal to a death-rate from these diseases of 1·2 per 1,000 of the population per annum, which is 1·3 lower than in 1898.

Influenza.

Influenza has contributed ten deaths to the general total of mortality.

Infantile.
Mortality.

Infantile mortality is represented by a ratio of 136 deaths under one year of age to 1,000 registered births.

Phthisis.

With regard to *Phthisis*, the total number of deaths from this disease belonging to the district appears to be steadily decreasing. The annual average for the previous ten years was 56·6 ; the total number of deaths for the past four years, 1896-99, are respectively 56, 54, 45 and 42, all below the average. When this circumstance is regarded in relation to the increasing population it is, of course, still more remarkable. The average death rate for the past ten years is 1·4, and for the four years above-mentioned 1·4, 1·3, 1·1 and 1·0 respectively. The reduction is most noticeable at the three age-periods, 15-25, 25-35 and 35-45. At all the other age-periods the differences are merely fractional.

Cancer.

With regard to *Cancer* the total number of deaths belonging to the district for the past year was 40, and the annual average number for the past 10 years 40·1.

The comparative statistics for the two areas respectively, into which I find it convenient to divide the district are, after distributing the deaths in the Workhouse, Addenbrooke's Hospital, and the County Lunatic Asylum respectively according to the population, appended in the following table:—

DISTRICT.	Deaths belong- ing.	Share of W.H.	A.H.	County Asylum.	Total.	Birth- rate.	Death- rate.
S. Andrew's-the-Less Registration Sub-District. ..	311	26	36	10	383	24·7	13·0
Remaining three Sub-Districts.....	126	13	17	5	161	12·5	14·1
Entire District.	437	39	53	15	544	21·3	13·5

Disease Incidence.

No cases of Small Pox have been notified during the year. Small Pox.

Scarlet Fever has been epidemic during the first three quarters of the year in continuance of the epidemic wave, which began in September 1898 and was discussed in my Annual Report for that year. The same influences appear to have been operating, especially neglect to seek medical advice till a late period of the disease, when much mischief had already been done by social intercourse. In the early period of the epidemic of the year previous, the incidence of this disease was mainly on the eastern side of the town, but during the present year it was diffused in a westerly direction and embraced the whole of the borough area. The isolation of seventy-five per cent. of cases in the Infectious Diseases Hospital had no doubt a large restraining influence, but its good effect was largely neutralised by the conditions Scarlatina.

already adverted to, viz.; late notification and social intercourse. The total number of cases notified during the year was one hundred and sixty-one in one hundred and nineteen households. The only year since the Notification Act came into force, which at all approaches the year under consideration with regard to the number of cases, was 1893, when one hundred and forty one cases in one hundred and eight households were notified. In only thirty-one instances were there multiple cases in schools, and these were distributed over six schools, some of which it may be remarked receive a large number of pupils, in one instance exceeding over five hundred. It should, however, be further remarked that the cases associated with these schools occurred in distinct batches. School assemblage may therefore be assumed to have had some small share in the spread of the disease, which was early arrested by prompt isolation; milk had no share whatever in the convection of disease germs. A few groups of cases may be noted, viz.: three cases in three households were almost certainly due to persistent visiting at the Infectious Diseases Hospital; two other cases occurred in a household of which the mother was employed at the Infectious Diseases Hospital, and three others were cases of domestics employed at that institution. Four others must be regarded as "return" cases. Secondary cases in twenty-one households amounted to thirty-two. In three instances the disease was introduced into households by visitors from a distance, viz.: two from neighbouring villages and one from London. The influence of social intercourse could be directly traced in twenty instances. Four patients developed the

disease in the General Wards of Addenbrooke's Hospital ; two of them evidently had contracted the disease before admission, and the rest may have become infected by visitors. Nine cases in eight households were imported, three cases in two households from Lowestoft, one from Clacton-on-Sea, and one each from Lewisham, Brompton, Victoria Park, and Harley Street, London, and the Rock Estate, Cherryhinton, respectively. The source of infection in the remaining fifty cases, distributed over various parts of the town, could not be satisfactorily traced.

Fifteen cases of diphtheria were notified during the year, of which three were fatal ; the notification of one was withdrawn and erysipelas substituted. Three cases were attributed to emanations from manholes and defective drains. Three cases were removed from country districts to Addenbrooke's Hospital for treatment. Four cases were imported, one from Saffron Walden, and three from London or its immediate neighbourhood ; in two of the London cases there was a distinct history of infection. A secondary case followed one of the above in the same household in Cambridge. No satisfactory source of infection could be traced in the three remaining cases.

Typhoid Fever has been present during ten months of the year ; the cases were widely distributed over the Borough area, but could not in any sense be regarded as having been epidemic and have presented a character similar to the cases of past years. Excluding Addenbrooke's Hospital, where six Country patients suffering from this disease were treated, thirty-five cases have occurred in thirty-two households, making a total of forty-one cases. Four of the total number in three households were secondary cases. Seven

Diphtheria.

Typhoid
Fever.

cases were imported, viz. : one from Stratford and Bloomsbury respectively in the London District ; one from Bury St. Edmund's ; one from Stapleford ; one from South Wales ; one was a member of the University who had been away on a holiday, and lastly a case occurred on the Stourbridge Fair Ground in a van which had been travelling about the country, the last places visited being Wisbech and Lynn, where there is a history of oysters having been eaten. Two cases in two households were fairly traceable to drinking organically polluted water. One case only can be attributed to eating "shell-fish." In regard to six cases in five households, no better reason could be assigned than drain nuisances. Five cases in four households were attributed to effluvia from manholes ; the evidence in favour of this channel of infection is inconclusive, especially in view of the fact that the vast majority of cases in the year under consideration and in previous years were certainly independent of any such conditions ; nevertheless it is only fair to state that of the five cases, two in one household in Thompson's Lane, and two cases in adjacent houses in York Street, were attributed to manholes, viz., two cases to each manhole. In regard to two cases, one was of doubtful character, and the other was stated to have been wrongly diagnosed and the notification was subsequently withdrawn. Eight cases in eight households could not be satisfactorily accounted for in any way. With regard to two houses in Sleaford Street several cases were fairly attributable to defective drainage ; another case occurred after the order for reconstruction of the drains had been carried into effect, and on re-testing the new work was discovered to be of a very inefficient and defective character.

Infantile diarrhoea is not specially notified, but from the death returns and pauper sickness returns the disease appears to have prevailed over the same area as in former years. From the meteorological observations recorded in my quarterly reports it will appear that the maximum temperature during the period of greatest incidence of this disease was high, and almost identical with the readings of the specially fatal year 1893. As I have pointed out in several of my previous reports, there is a distinct relation between this disease and persistent high temperature with polluted soil. Although the mortality was a little higher than that of the previous year, I still hope that the main drainage works, and the private drain improvements now in progress, will, in course of time, tend to the extinction of this very fatal disease of early childhood.

Infantile
Diarrhoea.

Cases of Measles and Whooping Cough are not notified, but judging by the death returns and the returns of pauper sickness supplied by the Guardians' Officers the first disease has been practically absent throughout the year, but Whooping Cough has been present especially during the earlier and later months of the year, and has occasioned six deaths in all.

Measles and
Whooping
Cough.

Influenza has been present practically throughout the year without respect to locality, and has caused ten deaths. This is the tenth year of the prevalence of this disease in the town, and it may not be altogether out of place here to state my fears that this disease, which in past times appeared in this country in epidemic form for limited periods, has, like Scarlet Fever, Measles, etc., become naturalised.

Influenza.

A "Passeport Sanitaire," dated Alexandria, 15th September, stating that the bearer, a member of

Trinity Hall, Cambridge, had left that port, which at the time was infected by Plague, was brought to my office. The bearer was, as is usual in such cases, kept under daily observation sufficiently long to afford assurance that he had not incepted the contagion of Plague.

Subjoined is a monthly record of the Disease Incidence of the year :—

	Small Pox.	Scarlet Fever.	Diphtheria.	Membranous Croup.	Typhoid Fever.	Continued Fever.	Puerperal Fever.	Erysipelas.	Totals.
JANUARY	21	...	...	4	...	1	4	30
FEBRUARY.....	...	27	1	...	3	...	...	3	34
MARCH	15	1	...	2	...	...	2	20
APRIL	14	3	...	...	...	1	...	18
MAY	12	2	...	1	...	...	1	16
JUNE	16	2	...	...	...	...	2	20
JULY	20	1	...	3	...	...	4	28
AUGUST.....	...	9	3	...	7	...	...	2	21
SEPTEMBER	14	...	...	8	...	...	2	24
OCTOBER	4	...	...	6	...	...	2	12
NOVEMBER	4	...	...	6	...	...	...	10
DECEMBER	5	1	...	1	...	...	1	8
TOTALS...	...	161	14	...	41	...	2	23	241

*Summary of action taken to limit the spread of
Infectious Disease.*

Every house in the district wherein a case of infectious disease has appeared, with the exception of a few instances only of Erysipelas, has been visited with a view to elucidation of the cause, or for the removal of injuriously operating conditions.

It has not been necessary to close any of the Public Schools on account of infectious disease amongst the scholars; orders for exclusion from school, for varying periods, of children from infected households have been sent to the following schools;—Abbey Schools, British Boys' and Girls' Schools, Catharine Street Girls' and Infants' Schools; East Road Boys', Girls' and Infants' Schools; Eden Street School; King Street Boys' and Girls' Schools; New Street Girls' School; Paradise Street School; Park Street School; St. Andrew's Roman Catholic School; St. Barnabas' Girls' School; St. Matthew's Girls' and Infants' Schools; St. Paul's Boys', Girls' and Infants' Schools; St. Philip's Boys' School; Sturton Street Infants' School; Wellington Street School and York Street School.

School
exclusion.

Thirty-four cases of Typhoid Fever, four cases of Diphtheria, and two cases of Erysipelas have been treated in Addenbrooke's Hospital. One hundred and twenty cases of Scarlet Fever (seventy-five per cent. of those notified), and two cases of Diphtheria, have been admitted into the Borough Infectious Diseases Hospital.

Isolations.

Considerable attention has been given during the year to the question of Tuberculosis in relation to the milk supply, following on the initiative of my Special Report, which was printed in my Annual Report for

Tuberculosis.

the year 1898. This Report was considered by the Sanitary Committee at its meeting on 9th January, and the following resolutions were agreed to :—

“(1) That the Chairman and Medical Officer of Health be requested to draft a leaflet giving instruction with regard to the dissemination of tuberculous disease, and the measures to be taken for its prevention.”

“(2) To recommend the Council that a petition drafted by the Town Clerk and the Medical Officer of Health be presented to the Local Government Board suggesting that certain sections of the various Acts of Parliament, which apply to infectious diseases, should also be made to apply to Phthisis.

“(3) To recommend the Council to offer to test free of charge with veterinary assistance the cows of the various dairies for tuberculosis.”

The draft leaflet and petition referred to in Resolutions 1 and 2 were brought up at a subsequent meeting and approved. At a later meeting of the Committee it was agreed that a further leaflet be drawn up after conference with the Cambridge Medical Society for general distribution, also that a circular be distributed among the medical men practising in the Town, informing them that “the Sanitary Authority would be prepared to render what assistance they can in the way of disinfection, &c., in cases of Phthisis.” Mr. Banham was requested “to act as Inspector for Tuberculosis amongst Cows,” and it was left to the Chairman and the Medical Officer of Health to arrange the details of inspection. Mr. Banham was appointed from time to time to test gratuitously the cows of all cowkeepers selling milk in the Town, and he reported his results, which are reproduced in the Appendix.

During the progress of these steps taken by the Council and the Sanitary Committee, an association of representative men called the "Cambridge Tuberculosis Committee" had been formed, with Prof. G. Sims Woodhead as chairman, for the purpose of formulating a practical method of dealing with the subject of Tuberculosis, and on the invitation of the Association the Chairman of the Sanitary Committee, Mr. Ald. T. Hyde Hills, was elected by the Borough Council as their representative.

The report of the "Cambridge Tuberculosis Committee" was subsequently submitted to the Public Health Committee, whereupon it was agreed "That the Chairman be asked to convey to the Committee the approval of this Committee of the action taken by the Tuberculosis Committee."

"A resolution from the Tuberculosis Committee with regard to the employment of Mr. Banham to test cows in the various cowsheds, &c., within the Borough was produced to the Public Health Committee" and considered; whereupon it was agreed that the request of the Committee be complied with.

The scheme for extension of the Isolation Hospital, initiated in the year 1898, and adverted to in my report for that year, has slowly passed through its various stages; the last stage but one, a public inquiry, having been held on the ninth day of January of the current year. It is sincerely to be hoped that soon building operations may be allowed to proceed. Tardiness of procedure has caused considerable inconvenience during the year as the need for increased accommodation has been pressing.

The question of a more efficient disinfecting stove has been informally considered by the members of the

Hospital
Extension.

Disinfecting
Stove.

Public Health Committee, and experiments have been instituted by Dr. Dalton, one of its members, which I trust will lead eventually to the establishment of a more efficient apparatus than the one at present in use.

Water Supply. The purity of the abundant and excellent water supply, which has been distributed by the Cambridge University and Town Waterworks Company since its establishment, has been, as mentioned in my reports for the years 1884, 1885, 1892 and 1897, threatened by building operations in the neighbourhood of the works in the parish of Cherryhinton. In view of this potential danger, the Company have, as I am informed, established a regular and frequent system of bacteriological and chemical examination of the water, and, furthermore, have successfully opposed a scheme of sewage disposal which, in their opinion, was not a perfectly safe remedy.

Tabular
Indications.

The details of the cases of Infectious Disease notified during the year are set out in Table III., and the localities invaded are indicated on the accompanying plan of the town. The table immediately following furnishes an account in detail of the work of disinfection :

RECORD OF DISINFECTION, 1899.

<i>No. of Articles from each Disease.</i>				
Scarlet F.	Diphtheria.	Typhoid F.	Puerperal F.	Erysipelas.
4,210	225	428	25	26
	Epithelioma.		Consumption.	
	4		10	
Chicken Pox.		Pyæmia.		Verminous.
45		23		8
		TOTAL.		
		5,004		

No. of Separate Stovings 262.

ROOMS FUMIGATED.

After			
Scarlet F.	Typhoid F.	Diphtheria.	Erysipelas.
172	24	9	1
Chicken Pox.	Measles.	Consumption.	
2	1	1	
TOTAL.			
210			

Cab fumigated after conveyance of infected persons.....	1
Water-closets disinfected.....	37
Drains disinfected.....	9
Library Books disinfected.....	17
School Books disinfected.....	25

*Sanitary Supervision and inquiries as to conditions
injurious to health, with results.*

The *special* work initiated in the summer of 1898 for the examination of all the house drains in the town with a view to the rectification of faulty conditions, which might be contributory to the smells complained of as issuing from the manholes, has been persistently continued during the year with excellent results. Since the commencement of this examination houses in the following Streets, Courts, Yards, etc., have been examined:—Abbey Street; Abbey Terrace; Abbey Walk; Adam and Eve Row; Ainsworth Street; Albert Street, Fitzroy Street; Albert Street, New Street; Albion Row; Bateman Street; Beehive Yard, Honey Hill; Bell's Court, Castle Street; Bentinck Street; Briggs' Yard, Northampton Street; Blossom Street; Bradmore Street; Brandon Place; Brewhouse Lane; Bridge Street; Broad Street; Brookside; Brunswick Place; Caius Street; Caius Terrace; Cambridge Place; Cardine Court, Coronation Street; Caroline Place; Castle Row; Castle Street; Chesterton Lane; Christ Lane; House to
house
inspection.

Church Street ; City Road ; Clarendon Street ; Collins' Buildings, Castle Street ; Collins' Court, Northampton Street ; Comet Yard ; Coronation Street ; Covent Garden ; Crispin Passage, East Road ; Cross Street ; Doric Street ; Downing Terrace ; Driver's Court, Coronation Street ; Drummer Street ; Earl Street ; East Road ; Eden Street ; Elm Street ; Emmanuel Road ; Evan's Court, Castle Street ; Fitzroy Street ; Fitzwilliam Street ; Flower Street ; Gas Lane ; Geldart Street ; Gentle's Yard, Northampton Street ; George Street ; Gloucester Street and Gloucester Terrace, Castle Street ; Gloucester Place, Fitzroy Street ; Gothic Street ; Gold Street ; Grafton Street ; Granta Place ; Green Street ; Gresham Road ; Gwydir Street ; Hall's Passage, Castle Street ; Honey Hill ; Hooper Street ; Hyde Park Corner ; Jesus Lane ; Jesus Terrace ; John's Place, Castle Street ; John Street ; Kettle's Yard ; King Street ; King's Parade ; Kingston Street ; Lawrence's Yard, Gloucester Street ; Leonard's Yard, Castle Street ; Leader's Row ; Little St. Mary's Lane ; Madingley Road ; Magdalene Street ; Maid's Causeway ; Mason's Court and Gardens, Pound Hill ; Merton Passage ; Merton Place ; Milford Street ; Mill Street ; Mount Pleasant ; Nelson Street ; New Square ; New Street ; Newmarket Road ; Newnham ; Norfolk Street ; Norfolk Terrace ; Northampton Street ; Norwich Street ; Occupation Road ; Orchard Street ; Paradise Street ; Parker Street ; Parker's Terrace, East Road ; Panton Street ; Pemberton Terrace ; Petersfield ; Petty Cury ; Pleasant Row ; Porcher's Yard, Shelly Row ; Portland Place ; Portugal Street ; Pound Hill ; Prince's Street ; Prospect Row ; Queen Street ; Regent Street ; Russell Street ; Rivar Place, Sleaford Street ; St. Edward's Passage ; St. Matthew's

Court; St. Matthew's Street; St. Peter's Court; St. Peter's Street; Saxon Street; Shelly Row; Shelly Terrace; Short Street; Sidney Street; Sleaford Street; Smith's Gardens, Gloucester Street; South Street; Storey's Almshouses, Mount Pleasant; Stone Street; Sturton Street; Sussex Street; Terrace Lane; True Blue Yard, Sidney Street; Trumpington Street; Union Road; Union Terrace; Victoria Street; Walton Terrace, East Road; Wellington Street; West Road; Whyman's Lane; Willow Walk; York Street and York Terrace. The remedial works effected have been one hundred and ninety-one brick and tile drains substituted by glazed pipes; one hundred and twenty-nine house drains ventilated and intercepted; fifty-three W.C.'s provided with new pans and traps; ninety-six sink wastes disconnected from drains and made to discharge over gulley traps in the open air; one hundred and eighty-eight rain water pipes disconnected from sewer, and three hundred and sixty-four bell-traps substituted by earthenware gulleys. The results are tabulated below :—

By whom Inspected.	No. of Houses Examined	No. of Drains Tested.	No. of Drains found defective.	Result of Action.		No action taken at present.
				Remedied.	In hand.	
Special Inspector.....	3418	1658	514	407	107	—
Ordinary Staff.....	485	289	205	131	70	4
TOTALS....	3903	1947	719	538	177	4

The results of the *routine* inspections are as follows :—

Additional closet accommodation has been provided in connection with six houses, Gloucester Street.

Routine
Inspections.

Flushing apparatus to closets have been provided in connection with two houses, Albert Street, Fitzroy Street; two houses, Broad Street; one house, Castle Street; one house, Coe Fen Terrace; one house, Regent Street; one house, St. Edward's Passage; one house, Sidney Street; and one house, Sussex Street.

A number of brick and tile drains have been removed in connection with two houses, Christ Lane; one house, Coronation Street; one house, Drummer Street; seven houses, Elm Street; seven houses, Gloucester Street; two houses, Grafton Street; four houses, Green Street; one house, Hobson Street; five houses, Hyde Park Corner; three houses, King Street; one house, Magdalene Street; one house, Maid's Causeway; nine houses, Newmarket Road; twelve houses, Newnham; four houses, Portugal Place; one house, St. Edward's Passage; one house, Sidney Street; seven houses, Sussex Street; one house, Trumpington Street; four houses, Victoria Street; and glazed pipe drains have been substituted in each instance.

A receptacle for the storage of manure has been constructed, as required by the by-laws, in Parsonage Street; and others which were found in a dilapidated condition, or not in accordance with the by-laws, have been effectively repaired or altered.

Unhealthy
Dwellings.

One house, Caroline Place; one house, Gas Lane; one house, King's Court, King Street; one house, Sun Court, Newmarket Road; were reported as being filthy; on notice from the Inspector of Nuisances the premises were cleansed.

Overcrowd-
ing.

Eight cases of overcrowding have been satisfactorily dealt with; in six instances by removal of some

members of the family, and in the remaining two by the removal of the whole family to a larger dwelling.

Owing to the inadequacy of the water supply to Watersupply. two houses, King Street; one house, New Square; one house, Newmarket Road; thirteen houses, Newnham; and one house, Russell Street; a supply has been in each instance laid on from the Company's Main.

*Sanitary supervision of places requiring
regular inspections.*

(1) FACTORIES AND WORKSHOPS, INCLUDING LAUNDRIES
AND BAKEHOUSES.

During the year, one hundred and two workshops and thirty-two bakehouses have been examined. In most instances the order of the Sanitary Authority was readily complied with. The following is a summary of the defects observed and the remedies applied:—

Workshops,
etc.

Trade Workshops.	No.	Defects found to exist.	Result of Action.
Bakehouses	12	10, Uncleanliness... 2, Dilapidated brick paving	Premises cleansed In hand
Basket Maker ...	1	Blocked drains	Drains examined and put in order
Bookbinder	1	Defective drains	New drains provided
Bootmakers	2	1, Uncleanliness	Premises cleansed
		1, Defective drains ...	Drains examined and put in order
Cycle Works ...	3	1, Defective drains ...	New drains provided
		1, Blocked drains	Drains examined and put in order
		1, Dilapidated roof to workshop	Roof repaired

Trade Workshops.	No.	Defects found to exist.	Result of Action.
Carpenter.....	1	Defective drains	New drains provided
Coach Maker ...	1	Drains not connected with sewer	Premises closed
Cutler	1	Defective drains	New drains provided
Dressmaker	1	Defective trap to closet	New trap provided
Laundries	7	1, Uncleanliness and defective drains	Premises cleansed and new drains provided
		5, Uncleanliness	Premises cleansed
		1, Defective drains ...	New drains provided
Milliner	1	Insufficient closet accommodation	New closet provided
Picture Frame Maker	1	Defective trap to drain	New trap provided
Robe Maker.....	1	Defective closet.....	Defect in closet remedied
Straw Hat Maker	1	Uncleanliness	Premises cleansed
Tailors	9	5, Uncleanliness	Premises cleansed
		2, Closet accommodation inadequate	New closet provided
		1, Overcrowding	Overcrowding abated
		1, Defective drains ...	Drains examined and put in order
Umbrella Maker	1	Defective drains	Drains examined and put in order
Vinegar Manufacturer	1	Closet accommodation inadequate.....	New closet provided

(2) DAIRIES, COWSHEDS AND MILKSHOPS.

Dairies,
Cowsheds,
and Milk-
shops.

During the year the register has been revised; there are now in the Borough forty-six cowkeepers and seventy-eight dairymen and milk purveyors; to this latter number must be added twenty purveyors who

live in various parts of the County but deliver milk in the town. All cowsheds, dairies and milkshops have been inspected according to regular periods, and cleansing, limewashing, and provision of new receptacles ordered in several instances. All orders have been duly carried out.

The model regulations suggested by the Local Government Board have been adopted and will come into operation on the 1st of March of the current year.

(3) CANAL BOATS.

Report under the Canal Boats Acts 1877—84, as required by the Local Government Board, and communicated to the Board.

“(1). The arrangements made are that the Chief Canal Boats.
Inspector of Nuisances has been appointed, without special remuneration, to inspect the Canal Boats plying in the district.

“(2). The Boats plying in the district belong generally to the Eastern Navigation Company. Nine inspections have been made during the year of boats plying in the district; two boats inspected had not complied with the regulations as to painting and other matters required by the Acts.

“(3). In one instance the boat required cleaning, etc., in the other the boat was found to be unregistered. There were no women or children on board any of the boats, and no case of infection has been notified or traced.

“(4). With regard to the boat requiring cleaning, etc., the requirements have been complied with. The owner of the unregistered boat has complied with the Act by Registration.

“(5). No legal proceedings have been taken during the year.

“(6). Number of registered boats 4.”

(4) *Slaughterhouses, Knackers and other offensive trades.*

Slaughter-
houses.

All slaughterhouses have been regularly inspected, and in several instances minor structural defects were discovered, and these, on notice from the Inspector, have been remedied.

Knackery,
etc.

An outbreak of Glanders in the district indicated the need, in the absence of any licensed knackery, of some properly-constructed and properly-managed place where animals could be slaughtered and their carcasses disposed of under satisfactory conditions; accordingly the Public Health Committee have directed considerable attention to the matter, and reports, which had been asked for, have been received from the officers specially concerned. The question is at present in abeyance, pending negotiations with the County Council for the construction of a joint establishment.

Several nuisances have occurred during the year with regard to pig-keeping contrary to the by-laws; in each instance the nuisance has been abated on notice from the Inspector.

Several smoke nuisances have been brought to the notice of the Authority during the year, and one of the Inspectors of Nuisances made observations from time to time with regard thereto.

The advice of the Medical Officer has been sought on some other matters, for instance, the sanitary condition of departmental rooms of the Guildhall, and generally about other matters of sanitary interest. A

report in answer to the allegation that fish were destroyed in the Cam by discharges from the Sewerage Works was presented.

Sale of Food and Drugs Act, 1875.

Copy of the Reports of the Public Analyst for the Borough of Cambridge upon the articles analysed by him under the above Act for the year ended 31st December, 1899, is appended hereto :

Adulteration
of Foods.

Samples.	By whom submitted.	Result of Analysis.	Remarks.
6 Milks ..	Inspector Taylor, an officer appointed by the Town Council.	All the samples were genuine.	All the samples were of good quality.
*3 Ice Creams..	Ditto.	All were genuine.	
11 Milks ..	Ditto.	Nine samples were genuine, and two were adulterated, one by the abstraction of 24 per cent. of its cream, and the other by addition of 11 per cent. of water.	The Vendor of the cream abstracted sample was fined 2/6 and costs. The Vendor of the sample adulterated with 11 per cent. of water, was convicted and fined 10/- and costs.
3 Milks	Ditto.	All genuine.	
3 Butters	Ditto.	All genuine.	
3 Gins	Ditto.	All genuine.	
1 Milk ..	Submitted by a private purchaser.	The sample was adulterated with 11 per cent. of water, and 70 grains of Carbonate of Soda per pint.	

* These samples were also examined bacteriologically by Prof. Woodhead, and the following is the summary of his report:—"It is evident from these facts (related in the antecedent part of the report) that the Ice Creams, as supplied to the Inspector, did not contain any very harmful organisms, but we have evidence that much greater care might be taken : (a) to use perfectly fresh materials—water, milk, etc. ; (b) to have the hands, clothing, and apparatus thoroughly clean ; and (c) to protect the 'cream,' at various stages of its manufacture from outside contamination."

The statutes in this regard have been amended by the "Sale of Food and Drugs Act, 1899" (62 and 63 Vict., Chap. 51), and came into operation on Jan. 1st of the present year. Circulars calling attention to the statutes and explaining its provisions and relations to the antecedent Acts were considered by the Public Health Committee and an abstract for the information and guidance of tradesmen and the public in general was published by order of the Borough Council.



APPENDIX.

A

Report of the Veterinary Inspector for Tuberculosis amongst Cows.

The total number of two hundred and eleven animals have been tested, of which one hundred and forty-two were healthy, twenty-two suspicious, and forty-seven diseased, eight of which had nodules in the udder.

Of this number eighty-five were in Town Dairies, forty-nine of which were healthy, six suspicious, and thirty diseased, three of which had nodular udders; and one hundred and twenty-six were in Country Dairies supplying milk in the Town, ninety-three of which were healthy, sixteen suspicious, and seventeen diseased, five of which had nodular udders.

This result shows what is now pretty well recognised, that there is less tuberculous disease in Country Dairies than in Town Dairies.

The attention of the Committee has been drawn to the fact that although the reaction to the tuberculin test by rise of body temperature indicates the animals are suffering from tuberculosis, still the test ought to be reapplied in order to make sure and to avoid errors.

The difficulty there is at present in detecting the nature of the nodules found in these cows' udders has also been indicated.

The test has been applied without exacting from the owners any promise to comply with any conditions.

The danger has furthermore been pointed out to the Committee of allowing cows to be tested by irresponsible persons, as unless the test is applied with care mistakes may arise and the value of the test suffer.

The opinion is held by some persons that Tuberculin will produce the disease ; but nothing can be more misleading, as there is not the slightest evidence forthcoming to support this opinion ; but, on the contrary, there is reason to believe it has an opposite effect ; and some persons even think it has a curative effect.

Repetition of the test renders the animals immune to its action for at least a time, and this fact has been taken advantage of by unscrupulous persons to pass "reacting" animals as sound, and, therefore, it is expedient that Tuberculin should be under proper control, and for the safety of the public only used by certain recognised responsible persons.

Hitherto no certificates have been given, but great care is needed before they are given, for it is possible that the animals in a particular shed might be quite free from tuberculosis on a particular day and diseased animals might be subsequently introduced.

Neither has the measure of identification of "reacting" animals by branding been resorted to, and, indeed, it is unlikely under existing circumstances that the cow-owners will willingly allow this to be done.

G. A. BANHAM,

Veterinary Inspector.

B

REPORT ON INFECTIOUS DISEASES HOSPITAL.

The proposed extension of the hospital buildings, including special diphtheria wards, a new residential block to accommodate an increased staff of nurses and servants, and a new laundry, as mentioned in my last report, have not yet been commenced owing to the protracted procedure necessary. All the stages, however, have now been completed, except the sanction of the Local Government Board to the loan of £7,146, which cannot be much longer withheld. The limited accommodation in the present administrative block has necessitated the appropriation of some of the rooms belonging to the fever wards as sleeping apartments for the nursing staff. It has been difficult under the circumstances to admit any other than Scarlet Fever patients.

A Medical Attendant has been appointed to take charge of such cases as cannot themselves provide medical assistance, whose duty it is also to attend the residential staff.

A revised set of regulations for the government of the Institution has been adopted.

The following table gives a summary of admissions and discharges during the year appearing in the Hospital books, and extracted for me by the Matron:—

Patients remaining in hospital on Dec. 31, 1898:

Scarlet Fever	...	...	18
Diphtheria	...	...	1
			—
Total	...	...	19
			—

Patients admitted during the year:

Scarlet Fever	...	...	120
Diphtheria	...	...	2
Total			<u>122</u>

Patients discharged during the year:

Scarlet Fever	...	...	130
Diphtheria	...	...	2
Total			<u>132</u>

Died.	Scarlet Fever	...	1
	Diphtheria	...	1
Total			<u>2</u>

Patients remaining in Hospital, Dec. 31, 1899:

Scarlet Fever	...	—	7
Total			<u>7</u>

E. W. died of Scarlet Fever after being in Hospital four days.

G. C. C. died of Diphtheria after being in Hospital five days and a half.



Cambridge Urban Sanitary District.

TABLE I.

Table showing the Annual Birth and Death Rates, Death Rates of Children, and Proportion of Deaths in Public Institutions in a Thousand Deaths for the Year 1899 and 10 Years preceding.

IN THE YEAR.	Birth Rate per 1000 of the Population.	Corrected Dth. Rate per 1000 of the Population.	Deaths of Children under 1 yr. per 1000 of Registered Births.	Deaths of Children under 1 yr. per 1000 of Total Deaths.	Deaths of Children under 5 yr. per 1000 of Total Deaths.	Deaths in Public Institutions ; per 1000 of Total Deaths.
1899	21·3	13·5	140 †	208 †	260 †	252 †
1889	25·1	13·9	113	204	318	182
1890	22·5	16·0	143	191	313	187
1891	26·9	17·0	134	209	281	195
1892	25·2	17·4	153	210	259	142
1893	25·7	16·9	174	256	325	150
1894	24·3	14·8	127	197	284	187
1895	24·7	14·8	146	226	285	173
1896	23·6	14·1	124	196	257	189
1897	23·6	12·7	133	227	294	247
1898	21·8	14·6	160	230	363	181
Average of 10 yrs. 1889-1898	24·3	15·2	140	214	297	183

† The values in these columns are expressed in round numbers ; and in order to bring them into relation with those corresponding to them in the Registrar General's Reports are not corrected for Deaths of non-residents.

Area and Population of the District or Division to which this Return relates.

Area in Acres.....3,278
Population (Last Census).....36,983
,, Estimated to middle of 1899.....40,700

Death Rates. { General 13·5..... { per 1,000 Population, estimated to middle of 1899.
 { Infant (under one year of age) { per 1,000 Births Registered.
 136..... {

TABLE II.
Report of the Sanitary Work Completed in the year 1899.

SANITARY DISTRICTS.	No. of Complaints received during the Year.	No. of Houses, Premises, etc. Inspected.	No. of Re-inspections of Houses, Premises, etc.	Results of Inspections.		House Drains.		Waterclosets. Majority hand flushed.		Dung Pits.		MISCELLANEOUS.														
				Orders issued for Sanitary Amendments of Houses and Premises.	Houses, Premises, &c., Cleansed, Repaired, Whitewashed, &c.	Repaired, Cleansed, Trapped, &c.	Ventilated.	Waste Pipes connected with Drains, &c., abolished.	Repaired, &c.	Supplied with Water.	New provided.	New provided.	Repaired, Covered, &c.	Unwholesome Houses reported.	Overcrowding.	Removal of Accumulations of Dung, Stagnant Water, Animal and other refuse.	Animals removed, being im- properly kept.	Bakehouses.	Workshops.	Licensed Cowsheds, 46	Dairy and Milkshops, 78	Licensed Slaughter-h's, 84	Canal Boats.	Cafes.	Legal Prods: i. e. Summonses.	Samples of Water taken for Analysis.
1	255	318	418	248	4	200	92	61	112	10	3	1	3	5	..	51	20	25	60	140	318	221	9	47	2	5
2	252	473	444	235	1	180	35	58	113	1	..	..	2	7	8	43	15	7	42	296	353	149	..	39	..	..
TOTALS.	507	791	86	483	5	380	127	119	225	11	3	1	5	7	8	94	35	32	102	486	671	370	9	86	2	5

TABLE III.

Table of Population, Births, and of New Cases of Infectious Sickness, coming to the knowledge of the Medical Officer of Health, during the year 1899, in the Urban Sanitary District of Cambridge; classified according to Diseases, Ages and Localities.

[illegible]

The Infectious Diseases Notification Act, 1889, came into operation on the 11th February, 1890.

† Removed into Borough Infectious Disease Hospital, besides which four cases of Diphtheria, thirty-four cases of Typhoid Fever, and two cases of Erysipelas, were medically treated in Addenbrookes Hospital.

The Borough Infectious Disease Hospital is situated in the S. Paul's Sub-District of St. Andrew the Less.

TABLE IV.

Table of Deaths during the Year 1899, in the Urban Sanitary District of Cambridge; classified according to Diseases, Ages, and Localities.

[illegible]

The subjoined numbers have also to be taken into account in judging of the above records of mortality.

Death occurring outside the district among per- sons belonging thereto. Chesterton Urban.	I	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	{ Under 5 } 5 upwds.	..	I	..
County Asylum, Fulbourn	I5	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	{ Under 5 } 5 upwds.	5	IO	..
Deaths occurring within the district among per- sons not belonging thereto. Chiefly Ad- denbrooke's Hospital	59	4	I	8	5	34	7	..	..	..	..	..	..	..	..	..	..	..	..	{ Under 5 } 5 upwds.	7	5	..

TABLE V.
CAMBRIDGE URBAN SANITARY DISTRICT.

Table shewing the Number of Deaths from the principal Zymotic Diseases and from all causes in the 10 years 1889 to 1898, and in the year 1899.

DISEASE.	1889.	1890.	1891.	1892.	1893.	1894.	1895.	1896.	1897.	1898.	Annual Average of 10 years, 1889—1898.	Proportion of Deaths to 1000 Deaths in 10 years, 1889—1898.	Total Deaths in 1899.	Proportion of Deaths to 1000 Deaths in 1899.
Smallpox.....	—	—	—	—	—	—	—	—	—	—	0·0	0·0	—	0·0
Measles	—	7	—	—	—	25	—	—	—	35	6·7	10·6	—	0·0
Scarlet Fever.....	2	6	3	—	2	3	—	5	—	—	2·1	3·3	1	1·7
Diphtheria	7	3	1	4	4	3	8	—	1	5	3·6	5·7	3	5·1
Whooping Cough	13	39	21	2	9	17	2	19	3	21	14·6	23·2	6	10·2
Fever { Typhus	—	—	—	—	1	—	—	—	—	—	0·1	0·1	—	0·0
	5	7	12	9	10	4	4	8	8	6	7·3	11·6	1	1·7
(Simple continued														
Diarrhoea	8	24	22	17	60	12	28	17	24	37	24·9	39·7	45	76·6
TOTALS	35	86	59	32	86	64	42	49	37	104	59·4	94·3	56	95·3
Deaths from all causes..	563	699	674	684	664	604	628	591	551	617	627·5	—	587	—

N.B.—This table is uncorrected for deaths of non-residents.

SUMMARY OF TABLE VI.

	No. of Deaths.		No. of Deaths.
I.—SPECIFIC FEBRILE, or ZYMOTIC DISEASES		<i>Brought forward.....</i>	521
1. Miasmatic Diseases.....	21	VI.—LOCAL DISEASES—continued.	
2. Diarrhoeal ".....	45	6. Diseases of Lymphatic System.....	—
3. Malarial ".....	1	7. Diseases of Gland-like Organs of Uncertain Use.....	3
4. Zoogenous ".....	—	8. Diseases of Urinary System.....	23
5. Venereal ".....	3	9. Diseases of Reproductive System.....	
6. Septic ".....	8	(a) Diseases of Organs of Generation... 1	
II.—PARASITIC DISEASES.....	3	(b) Diseases of Parturition..... —	
III.—DIETIC DISEASES.....	3	(c) Injuries during Delivery..... —	
IV.—CONSTITUTIONAL DISEASES.....	126	10. Diseases of Bones and Joints..... 1	
V.—DEVELOPMENTAL DISEASES.....	66	11. Diseases of Integumentary System..... 3	
VI.—LOCAL DISEASES		VII.—VIOLENCE.	
1. Diseases of Nervous System.....	66	1. Accident or Negligence..... 14	
2. Diseases of Organs of Special Sense..... —		2. Homicide..... —	
3. Diseases of Circulatory System..... 65		3. Suicide..... 1	
4. Diseases of Respiratory System..... 84		4. Execution..... —	
5. Diseases of Digestive System..... 30		5. Surgical Operation..... 1	
<i>Carried forward.....</i>	521	VIII.—ILL-DEFINED AND NOT SPECIFIED CAUSES.....	19
		TOTAL.....	587

BOROUGH OF CAMBRIDGE

1899.



- SCARLET FEVER. ●
- DIPHTHERIA. ●
- TYPHOID FEVER. ●
- PUERPERAL FEVER. ●
- ERYSIPELAS. ●

Scale
Six Inches to a Mile.

Feet 1000 500 0 1000 2000 3000 4000 5000

E. WAREHAM HARRY,
Borough Engineer & Surveyor.

